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| EXAMINER | |
|---|---|
| CHANKONG, DOHM | |
| ART UNIT | PAPER NUMBER |
| 2152 | |

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/818,955 | NISHI, KOJI | |
| | Examiner | Art Unit | |
| | Dohm Chankong | 2152 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *04 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1> This action is in response to Applicant's remarks and amendment. Claims 1-15 are presented for further examination.

2> This is a final rejection.

### *Response to Arguments*

3> Applicant's arguments filed 8.4.2005 have been fully considered but they are not persuasive. Applicant is arguing in substance (a) the primary art reference, Arunchalam fails to teach a service broker device at the functional host layer of the network service management device; (b) Arunchalam fails to disclose logic in which a service broker device of a domain decides whether a subject for executing a subsequent process is an external or internal system; and (c) Arunchalam fails to disclose a function of brokering domains.

4> In regards to (a), Arunchalam's QoS device represent the network service management device [Figure 3 «item 301»]. Arunchalam discloses that the QoS device has a QoS agent that includes the capability of a bandwidth broker and to provide "advanced service level negotiation and brokering" [column 4 «lines 23-33»]. Here, the interpretation is that the QoS agent of the QoS device corresponds to claimed service broker device as Arunchalam has provided his QoS with both intradomain and interdomain service level negotiation and brokering. Applicant asserts generally that the QoS agent is not at the

functional host layer. There is no further definition or clarification in the claims or in the specification of what Applicant means by "functional host layer".

Arunchalam discloses in his figures the QoS agent is located at a functional layer of the QoS device [Figure 3 «item 301» | Figures 10a, 10b ]. Examiner interprets that the layer where the QoS agent is placed in the QoS device corresponds to a functional host layer claimed by Applicant. The claim language and the specification do not provide any disclosure that this interpretation of Arunchalam's layer cannot read on Applicant's functional layer. Nor has Applicant provided any specific argument against why Arunchalam's layer within the QoS device does not correspond to the functional host layer. Thus, Examiner believes that Arunchalam's QoS agent is placed at the functional layer of the QoS device.

5> In regards to (b), Applicant is directed to figure 7 in Arunchalam. The QoS device contains an internal system and is connected to external systems, where the wireless QoS agent communicates with internal system components including radio resource manager or flow monitoring element as well as external system, QoS flow classifier. As such, when the agent receives messages such as the service level negotiation with customers, the agent must decide whether or not to communicate with the internal system of the QoS device or external system located in the external network [column 7 «line 36» to column 8 «line 46»].

6> In regards to (c), Applicant is directed to [column 4 «lines 16-33»]. Arunchalam clearly discloses that his QoS agent is capable of providing bandwidth brokering functions

such as intra-domain and interdomain service level negotiation and brokering. Examiner interprets this disclosure as the QoS agent enabled of "providing a broker function for service agreement among the operations management networks". See also Figure 2 where there are multiple networks and the QoS agent provides the service level negotiation between these networks [column 4 «lines 1-33»].

7> Based on the preceding remarks, Examiner maintains the claim rejections set forth in the previous action, 5.10.2005.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8> Claims 1, 2, 10 and 12-15 are rejected under 35 U.S.C § 102(e) as being anticipated by Arunchalam et al, U.S Patent No. 6.631.122 ["Arunchalam"].

9> As to claim 1, Arunchalam discloses a quality assured network service provision system compatible with a multi-domain network, wherein

a communication network comprising a plurality of operations management networks (domains) which are connected to a plurality of customer networks with user terminals and which are respectively managed by different providers [Figure 2 | column 4 «lines 1-15»], the system comprising:

a network service management device for collectively managing device clusters incorporated within an operations management network of each of said providers, and negotiating with another operations management network which is managed by another provider and with which interconnection is to be established based on a required quality level from a customer so as to ensure an end-to-end quality level [Figure 2 | column 4 «lines 16-33» where: IP QoS manager is interpreted as a network service management device]; and

a service broker device at the functional host layer of said network service management device cluster for storing information on the operations management networks managed by the respective providers, and brokering a service agreement between the operations management networks of said plurality of providers [column 4 «lines 1-59» | column 5 «lines 54-67»].

10› As to claim 2, Arunchalam discloses the quality assured network system compatible with a multi-domain network of claim 1, wherein

said network service management device comprises an outputting device for outputting information on services which can be provided by each of said providers and domain information to said multi-service broker [column 6 «lines 13-51»]; and

said service broker device comprises a device for storing output information from each network service management device, selecting a network service management device of a domain which will satisfy a required quality level when a network service request is generated by a customer, and issuing instructions for introducing and setting necessary information [column 5 «lines 54-67» | column 8 «line 47» to column 9 «line 18»].

11› As to claim 12, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 1, wherein the service broker device designs an inter-domain connection route and the network service management device designs an intra-domain route so as to satisfy the required quality level [column 4 «lines 16-33» | column 8 «lines 29-46»].

12› As to claim 13, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 1, wherein quality levels which can be provided and methods for specifying the quality levels are different for the respective providers, and the service agreement is reached in such a way that required quality levels are associated with service levels in the respective providers in order to maintain the quality levels at a constant level in the multi-domain network [column 6 «lines 17-25 and 52-65» | column 9 «lines 7-18» | column 11 «lines 17-54»].

13› As to claim 14, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 1, wherein a bandwidth broker

provided in the network service management device refers to available resource capacity between the domains and service information, and determines whether an agreement is possible by checking whether requested service information can be accommodated by a service agreed to between the domains [column 8 «lines 29-53» | column 9 «lines 32-41»].

14› As to claim 15, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 1, wherein the agreement is one relating to service conditions for providing a service of consistent quality throughout the multi-domain network which satisfies the required quality level [column 1 «lines 7-14» | column 6 «line 66» to column 7 «line 12»].

15› As to claim 10, as it does not teach or further define over the claimed limitations of claim 1, claim 10 is similarly rejected for the same reasons set forth for the rejection of claim 1, supra.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16> Claims 3 and 5-7 are rejected under 35 U.S.C § 103(a) as being unpatentable over Arunchalam.

17> As to claim 3, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 2, wherein

said network service management device comprises an input and output device for input, by an operator, of information on services which can be provided by said provider and domain information made up of configuration information about an operations management network of said provider [column 6 «lines 13-51» | column 11 «line 62» to column 12 «line 23»];

a workflow server for determining transfer destinations for processing commands based on each service request from a customer [column 6 «lines 41-51» | column 8 «line 65» to column 9 «line 18» where : Arunchalam's QoS manager is interpreted as having the same functionality as the workflow server];

a bandwidth broker for registering said domain information and service information in said service broker device, and determining, in cooperation with said workflow server, a subject for executing a subsequent process [Figure 3 | column 4 «lines 23-39» |column 8 «lines 47-53» where: the QoS agent is analogous to a bandwidth broker and works with the QoS manager]; and

an internal processing system for performing processing management of information required by said communication device [column 4 «line 34» to column 5 «line 16»].

Arunchalam does not explicitly disclose storage devices for storing information input from said input and output device by information type. Arunchalam discloses retrieving

information from said input and output device by information type [column 8 «line 36» to column 9 «line 17»]. And as storage devices are ubiquitous and expected in the art, it would have been obvious to one of ordinary skill in the art to incorporate storage devices into his system to enable storage of the information for easy access by the various managers and agents in the network.

18› As to claim 5, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 3, wherein

said bandwidth broker and said workflow server have a means for deciding, based on logic, whether a subject for executing a subsequent process due to a customer service request is in an external system or an internal system [column 4 «lines 16-26» | column 7 «line 36» to column 8 «line 46»];

said bandwidth broker has a means for deciding a domain in cases where a subject for executing a subsequent process in an external system [column 4 «lines 16-26» | column 7 «line 36» to column 8 «line 46» | column 9 «lines 45-59»];

said workflow server has a means for deciding an internal processing system of a forward destination in cases where a subject for executing a subsequent process is in an internal system [column 4 «lines 16-26» | column 6 «line 66» to column 7 «line 12» | column 7 «line 36» to column 8 «line 46»].

19› As to claim 6, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 3, wherein

said service broker device has a means for referring to service information stored in said service storage section and deciding whether a subject for executing a subsequent process due to a customer service request is in an external system or an internal system [Figure 7 | column 4 «lines 16-26» : "intradomain" and "interdomain" service level negotiation];

a means for deciding an external forwarding destination in cases where a subject for executing a subsequent process is an external system [column 4 «lines 16-26» | column 7 «line 36» to column 8 «line 46» | column 9 «lines 45-59»]; and

a means for deciding an internal processing system of a forward destination in cases where a subject for executing a subsequent process is in an internal system [column 4 «lines 16-26» | column 6 «line 66» to column 7 «line 12» | column 7 «line 36» to column 8 «line 46»].

20› As to claim 7, Arunchalam discloses the quality assured network service provision system compatible with a multi-domain network of claim 3, wherein

said internal system comprises any one of a customer care server for managing service order information received from customers [column 6 «lines 31-40»],

a design server for managing network resources of an operations management network of a provider [column 6 «lines 41-51»],

a policy server for reading pre-recorded policy information, as well as converting said policy information into setting information for communication device of a specific vendor, and performing provisioning of a communication device for the provision of a service [column 9 «lines 4-59»], and

a network management device for providing a network fault management function for a configuration management and open channel incorporating communication devices within an operations management network of a provider and connection configuration of circuitry for connecting said communication devices [column 4 «lines 16-33],

each of which is connected to said workflow server [Figure 2 | Figure 3].

21› Claim 4 is rejected under 35 U.S.C § 103(a) as being unpatentable over Arunchalam in view of Yates et al, 6.330.586 ["Yates"].

22› As to claim 4, Arunchalam does not disclose:

said service broker device comprises a storage device for storing service information and domain information received from said network service management device; and

a data processing device for performing information processing such as writing and reading of information to and from said storage device, as well as providing a security management function relative to said bandwidth broker.

23› In the same field of invention, service provisioning, Yates discloses:

said service broker device comprises a storage device for storing service information and domain information received from said network service management device (column 15, lines 41-60, column 18, lines 38-47 and column 23, lines 65-67); and

a data processing device for performing information processing such as writing and reading of information to and from said storage device, as well as providing a security management function relative to said bandwidth broker (column 24, lines 1-7 and lines 56-61).

It would have been obvious to one of ordinary skill in the art to incorporate Yates' storage device into Arunchalam's service broker device as storage devices are well known in the art for providing more efficient access of required information for network devices. Also, it would have been obvious to incorporate Yates' data processing device to enable security-type functionality into Arunchalam's system. Such security functionality is well known in the art for providing safe and secure data transmission and would enhance Arunchalam's service provisioning system.

24> Claim 11 is rejected under 35 U.S.C § 103(a) as being unpatentable over Arunchalam, in view of Lumelsky et al, U.S Patent No. 6.516.350 ["Lumelsky"].

25> Arunchalam does not disclose a single service broker.

26> Lumelsky discloses providing a single service broker that manages domain information and information on services which can be provided by the respective providers for all the operations management networks connected thereto [Figure 4 «item 400» | column 8 «lines 61-66» | column 9 «lines 31-39 and 45-64»].Lumelsky's SCP is analogous to Arunchalam's service broker devices (which are distributed across the networks. It would have been obvious to incorporate Lumelsky's teaching into Arunchalam's multiple service

brokers to create a single device with all the same functionality. Consolidating devices into a single device is well known in the art for providing a more efficient implementation of resources; thus, one would have been motivated to perform such an implementation to enable the same functionality into a single device instead of the multiple devices of Arunchalam's system.

27> Claims 8-9 are rejected under 35 U.S.C 103(a) as being unpatentable over Arunchalam, in view of Graham et al (hereinafter Graham), U.S Patent No. 6,594,700.

28> As to claim 8, Arunchalam discloses a method of providing a quality assured network service compatible with a multi-domain network, comprising:

the limitations of the system of claim 1 [see claim 1, supra];

wherein said method comprises:

a service agreement step in which a request is received from the customer, said service broker device and said network management device reach an agreement relating to service conditions for providing a service which will satisfy a required quality level, and route information for an appropriate domain and a network management device are selected [column 6 «lines 31-40» | column 6 «line 66» to column 7 «line 12» | column 8 «lines 47-53»]; and

a service provisioning step for performing service provision on a communication device based on service conditions and route information agreed upon in said network management device [column 4 «lines 16-33»].

However, Arunchalam does not teach a service registration step in which a network management device of each provider registers in said service broker device, domain information comprising configuration information and information on services which can be provided.

29> Graham teaches a service registration step in which a network management device of each provider registers in said service broker device, domain information comprising configuration information and information on services which can be provided (column 6, lines 12-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Graham's service registration step into Arunchalam to provide a central registry for providing convenient and efficient method for clients to look up services.

30> As to claim 9, Arunchalam discloses the method of providing a quality assured network service compatible with a multi-domain network according to claim 8, wherein said service provisioning step further comprises a step for service order processing, a step for route design processing and a step for provisioning processing [column 4 «lines 16-67» | column 6 «lines 9-51»].

*Conclusion*

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is (571)272-3942. The examiner can normally be reached on Monday-Thursday [7:00 AM to 5:00 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571)272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DC

BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER